

What is claimed is:

1. A network device, in particular for a
5 telecommunications network with synchronous digital
hierarchy, for delay compensation of data packets,
which delay occurs during passage of the data packets
through an input stage and an output stage of the
10 network device, the output stage being connected to
the input stage via a first transfer path and via a
second transfer path, a first delay occurring on the
first transfer path and a second delay occurring on
the second transfer path, wherein the data packets are
15 transferred in multiplex frames, each containing at
least one data packet to be transferred, as well as at
least one phase reference identifier for determining
the respective position of the data packet within the
corresponding frame, wherein the network device
20 comprising
- phase correcting means for adjusting the phase
reference identifier allocated to a respective data
packet by a predetermined phase correcting value,
leading in the phase, which corresponds to a maximum
25 expected delay for a transfer of the data packets
on the first transfer path or the second transfer
path, and
 - buffer means for buffering the data packets by
buffering times such that for each respective data
packet its buffering time and its delay actually
30 needed for passing through the network device in
total correspond to the maximum expected delay taken
into account in its allocated, adjusted phase
reference identifier.

2. A network device according to Claim 1, wherein the
buffer means determine the delay of the data packets
actually needed for passing through via the first
transfer path or the second transfer path and adjust
5 the respective buffering time to the actually needed
delay.
3. A network device according to Claim 1, wherein the
maximum expected delay is substantially determined by
10 means of maximum lengths of connecting leads used for
the first transfer path and/or the second transfer
path.
4. A network device according to Claim 1, being
15 constructed as a redundant network device wherein the
first transfer path is guided via a first device and
the second transfer path via a second device,
redundant to the first device.
- 20 5. A network device according to Claim 4, wherein the
first device and the second device comprising a first
or a second switching matrix, respectively.
6. A network device according to Claim 5, wherein the
25 first switching matrix and the switching matrix each
comprising a first and a second matrix module,
connected to one another via a connecting lead.
7. A network device according to Claim 1, wherein the
30 input stage and the corresponding output stage are
combined into a joint module and/or the input stage
and the output stage are constructed as matrix stages
of a multi-stage switching matrix.

8. A network device according to Claim 1, wherein the phase correcting means are allocated entirely or partially to the input stage or to the output stage.
- 5 9. A network device according to Claim 1, wherein the buffer means comprise buffers arranged on the input side of the output stage or on the input side of the first transfer path or on the second transfer path.
- 10 10. A network device according to Claim 1, wherein the multiplex frames are SDH frames and the phase reference identifiers are contained in the control information of the multiplex frames and the data packets are virtual containers or are transferred in
15 virtual containers.
11. A method for delay compensation of data packets, in particular for a telecommunications network with synchronous digital hierarchy, which delay occurs
20 during passage of the packets through a network device comprising an input stage and an output stage, connected to the input stage via a first transfer path and a second transfer path; a first delay occurring on the first transfer path and a second delay occurring
25 on the second transfer path, wherein the data packets are transferred in multiplex frames, each containing at least one data packet to be transferred, as well as at least one phase reference identifier for determining the respective position of the data packet
30 within the corresponding frame, wherein the network device performing the following steps:
- adjusting the phase reference identifier allocated to a respective data packet by a predetermined phase correcting value, leading in the phase, which

corresponds to a maximum expected delay for a transfer of the data packets on the first transfer path or the second transfer path, and

- buffering the data packets by buffering times such that for each respective data packet its buffering time and its delay actually needed for passing through the network device in total correspond to the maximum expected delay taken into account in its allocated, adjusted phase reference identifier.

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12. A program module for a network device comprising program code means which carry out the method according to Claim 11 when run by a control means of the network device.

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13. A memory means, in particular diskette, CD-ROM, Digital Versatile Disk, hard disk drive or similar, with a program module according to Claim 12 stored thereon.

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14. A network device for processing digital data streams composed of frames, each containing at least one data packet and at least one corresponding phase reference identifier indicating the position of the data packet within its frame; the network device comprising compensation means for compensating a delay of said data packet occurring during passage of the data packet through the network device, said compensation means comprising:

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- phase correcting means for adjusting the phase reference identifier by a predetermined phase correcting value, which corresponds to a maximum expected delay for passage of the data packet through the network device and
- buffer means for buffering the data packet for a predetermined buffering time such that its buffering time and its delay actually needed for passing through the network device in total correspond to the maximum expected delay.

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